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How Does Exercising Burn Fats?

Fats or glucose?

Summer has come, and - oops?! - you have come out of the winter wrapped in "rolls" of fat. You push your body into diet and exercise to burn out all the blubber. Now, Danish researchers are trying to explain how fat oxidation occurs during exercise and physical activity. Their investigations show fat oxidation during exercise to be a complex result of subtle interplay between the cardiovascular, neurological, endocrine and muscle metabolic systems. While you put your muscles at work, during exercising or physical activity, the primary fuels "consumed" by muscles to get energy are sugars and fats. When doing an easy exercise, the muscles tend to burn relatively higher fat amounts than glucose, but as exercises turn intenser, a higher percentage of the muscle's energy needs are delivered by burning glucose, and when the physical effort reaches its peak, almost only glucose is burnt. (You must know that the human body burns just glucose, even other types of food sugars - such as fructose or lactose - must be turned first into glucose by the liver). The team at the Copenhagen Muscle Research Center at the University of Copenhagen investigated if this shift in the fuel source is a property of the muscle itself, or if it represents the interplay between what occurs in the muscle and the body's response to exercising. The researchers focused on muscle fuel use in response to graded exercise performed with just one leg. Nine healthy male volunteers performed one-leg exercise at 25, 45, and 85% of their peak workload. The tests revealed that, when only a small part of muscle is contracting, and blood flow and oxygen supplies are not constricted by central circulatory capacity, the muscle kept on burning fat, without appealing to glucose. But body adjustments process during the whole body exercise shifted this fuel source. This explains why athletes "hit the wall" during events like the marathon, and could be applied for the adaptations in middle-aged adults practicing physical exercise to prevent or treat metabolic diseases, like diabetes and obesity. A detailed knowledge could lead to the development of agents permitting the maintenance of fat oxidation even during intense exercising.